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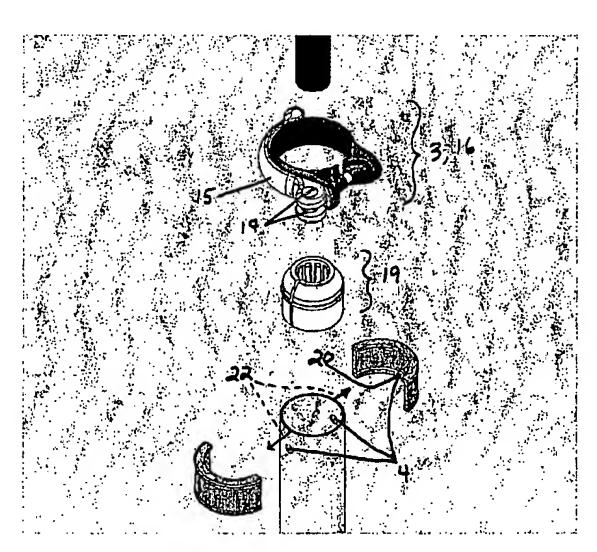
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(54) Title: TELESCOPING MEMBER METHODS AND APPARATUS



(57) Abstract: The inventive technology may retate to a retention apparatus (1) that in at least one embodiment comprises a compression sleeve element (2) established at least partially 5 around portions of a first elongated member (6) that telescopes from a larger elongated member (8) in which it may nest. A relative motion obstruction element (4) may disallow only certain types of motion, e.g., rotational and axial, of the compression sleeve element relative to the elongated members around which it may be at least partially established. As it instead may be the compression enhancement element (3) - which may be used to 10 generate a retaining compression force element - that prevents perpendicular displacement of the compression sleeve element, deactivation and effective disengagement of the compression enhancement element may allow for a quick removal of the compression sleeve element without requiring that it be slid off an end of either elongated member.

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# INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : F16B 7/10		
US CL : 403/109.1,109.2,109.6,110,289,290,314,320,371,374.5,377,378,379.1,408.1,dig.4  According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
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U.S.: 403/109.1,109.2,109.6,110,289,290,314,320,371,374.5,377,378,379.1,408.1,dig.4		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim No.
Category * Citation of document, with indication, where app		1-41
X US 2002/0030146 (Akaike) 14 March 2002 (14.03.200	02), para.0001-0077, fig. r and 5.	1.41
X US 2,817,548 (Uthemann) 14 October 1955 (14.10.19	US 2,817,548 (Uthemann) 14 October 1955 (14.10.1955), figs.1-3	
A US 6,830,227 (Nakatani) 14 December 2004 (14.12.20	US 6,830,227 (Nakatani) 14 December 2004 (14.12.2004), figs.1-7	
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